Naval Mission Planning Systems

PMA-233

Mission Planning Users Conference
15-17 February 2000

Captain Richard C. Moebius, USN

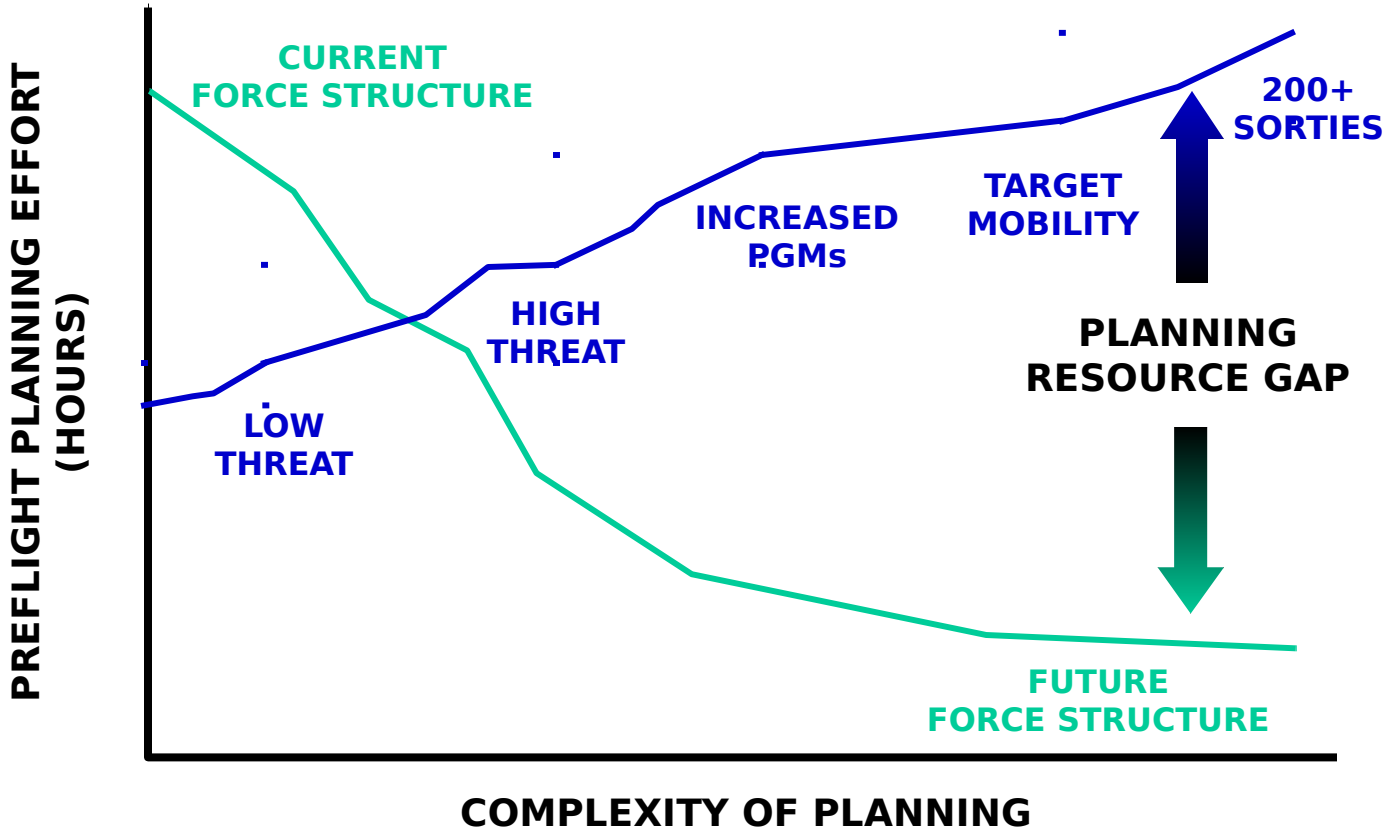
Changing Naval Warfare Environment

Increasing Demands, Decreasing Resources

Target Set	→	Increasingly mobile
Threat	→	Mobile and electronically agile
Aircraft	→	Multi-mission/single seat, increased processing and ”programmability”
Weapons	→	Guided, standoff, pre-flight planned
Operational Concepts	→	High tempo, maneuver warfare
National Expectations	→	Rapid, decisive victory, with minimal losses and enemy collateral damage/non-combatant casualties
Force Structure	→	Fewer platforms, weapons, and people

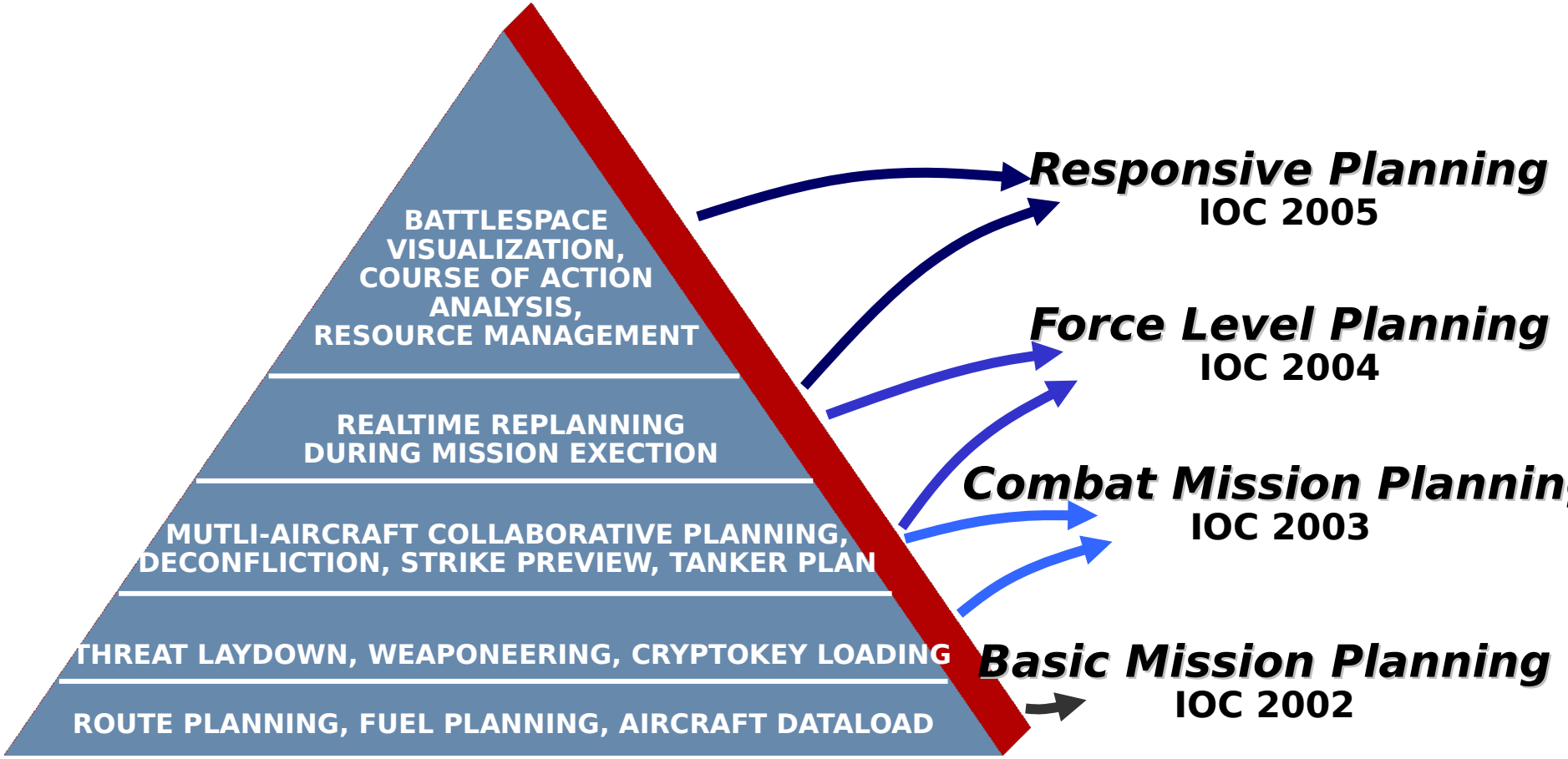
Changing Naval Warfare Environment

The Mission Planning Gap

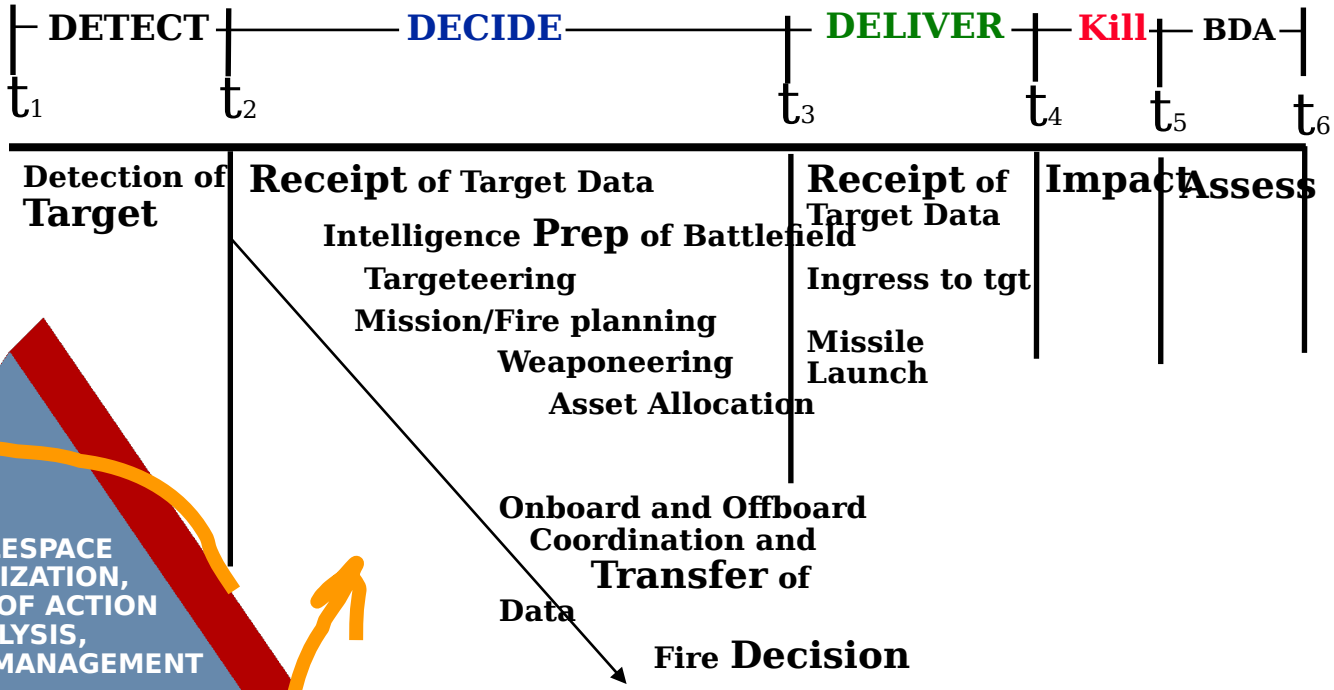


While the demands for preflight planning increase,
the people available to plan is going down

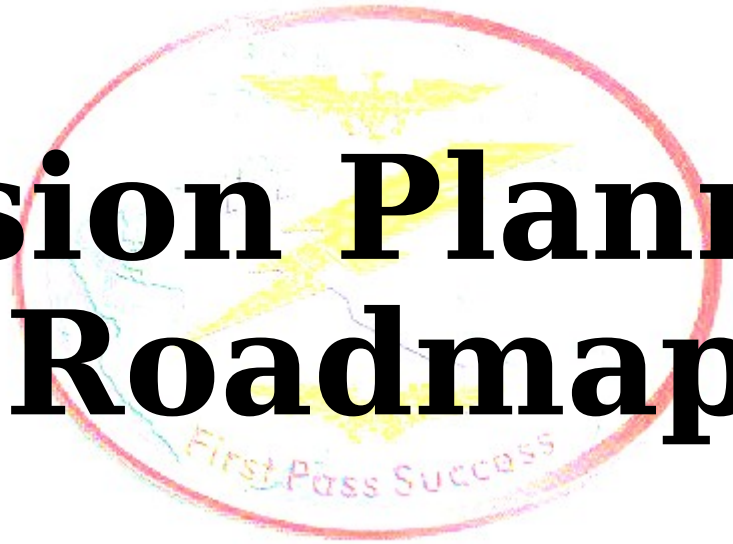
Maslow's Hierarchy of Mission Planning Needs



Relationship Between JMPS and NCW



Mission Planning Roadmap



NavMPS Roadmap 2000

CY 99 | 00 | 01 | 02 | 03 | 04 | 05 | 06

6.2K/6.2.1 — **Maintain/Sustain**

Tactical Automated Mission Planning System

Maintenance of Current Systems

T-45; H-46; UH-1; AH-1; TAMMAC; NSPW; JSOW; JDAM; SLAM; HARM; FAMP; AH-1; E-2

NAVY PFPS

Navy - Portable Flight Planning Software

N-PFPS 3.1 — **N-PFPS 3.2**

Flight Performance Modules fielded upon development and certification. Unclassified Data loading as funding permits.

JMPS V1 Development | **OT**

IOC JMPS Basic Mission Planner

Joint Mission Planning System

JMPS Components and UPCs

Estimated UPC Migration

ARC-210
C-130
C-2
T-45
H-46
UH-1
AH-1
TAMMAC
NSPW

TAMPS off CV

F/A-18
F-14
EA-6B
JSOW
JDAM
SLAM
HARM
FAMP

E-2
SH-60R
H-60/B/F/H
CH-53
V-22
P-3
S-3
CH-60 (CSAR)

AV-8B
MH-53
EP-3
ES-3
E-6A

ATACS

** F/A-18 A-D only

NSPW Development *

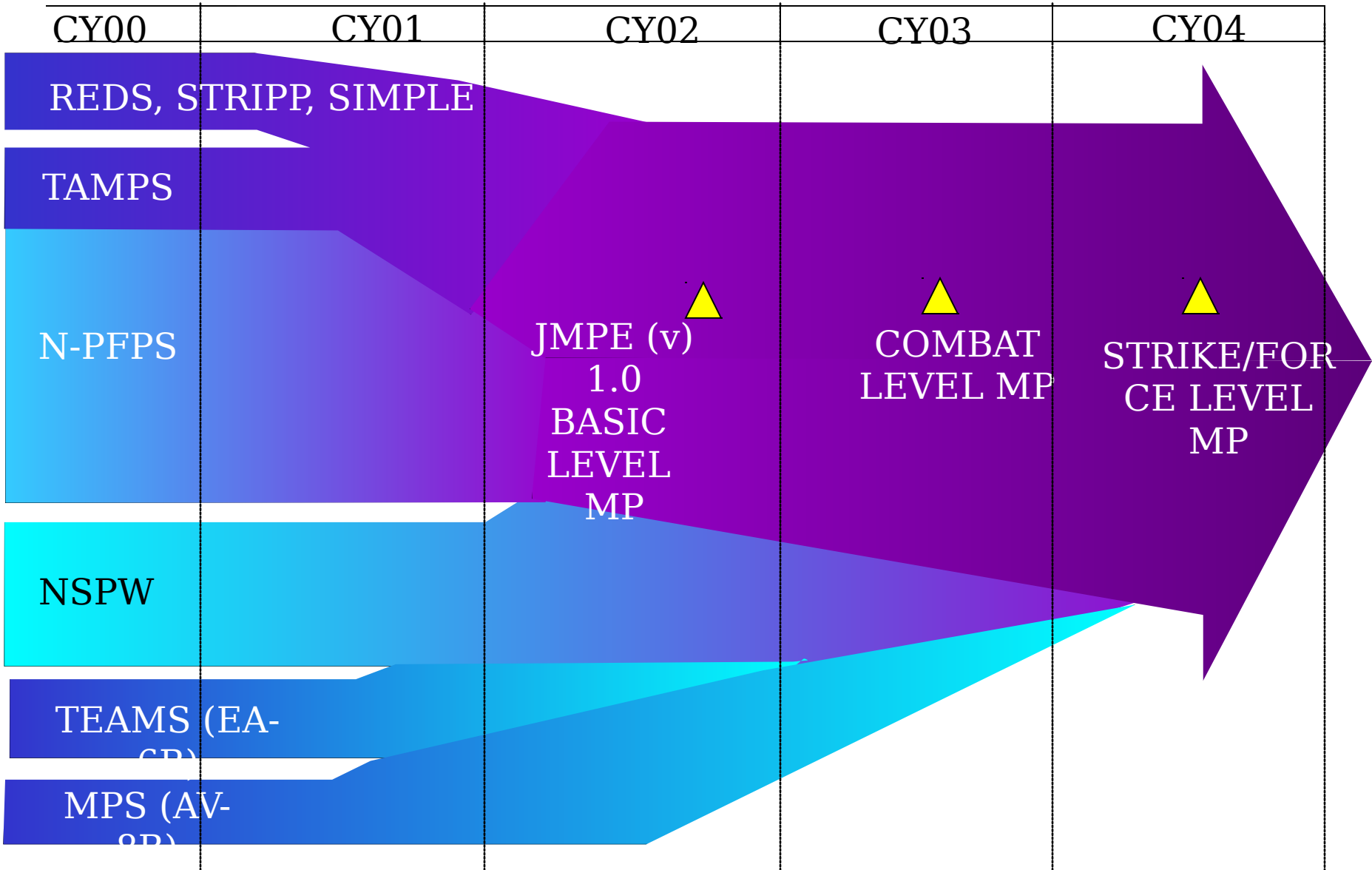
Stand Alone ** and Integrated W/JMPS

Integrated w/ JMPS

Weaponeering

Schedule

Naval Migration Plan to JMPS



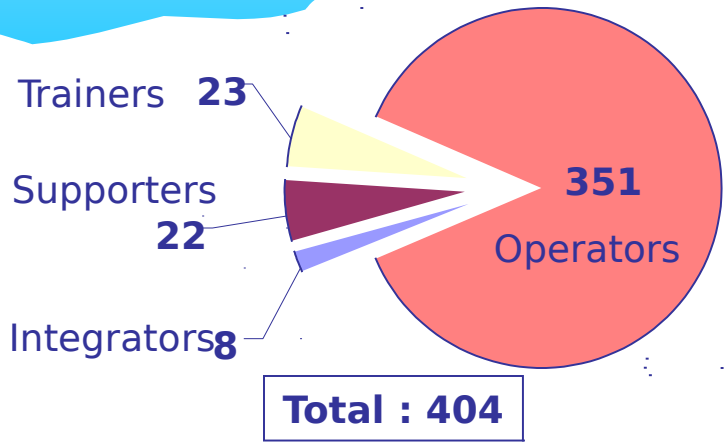
Fleet Satisfaction Metrics

Objectives

- Determine Baseline Metrics and Measures of Effectiveness of Mission Planning Tools Currently Used by the Fleet
  - TAMPS - Tactical Automated Mission Planning System
  - N-PFPS - Navy-Portable Flight Planning System
  - ATACS - Automated Tactical Manual
  - TSCM - Tactical Strike Coordination Manager
  - WinJMEM - Windows based Joint Munitions Effectiveness Manual
  - TARGET - Tactical Release Gameplan Execution Tool
  - TOPSCENE - Tactical Scene Generator (PMA-205 responsibility)

- Develop a Long Term Process to Effectively Assess User Satisfaction for Feedback into Subsequent Mission Planning Developments and Upgrades

Reaching Out to the Fleet



Total : 404

• "Operator" survey captures the thoughts and concerns of the entire Fleet User customer base

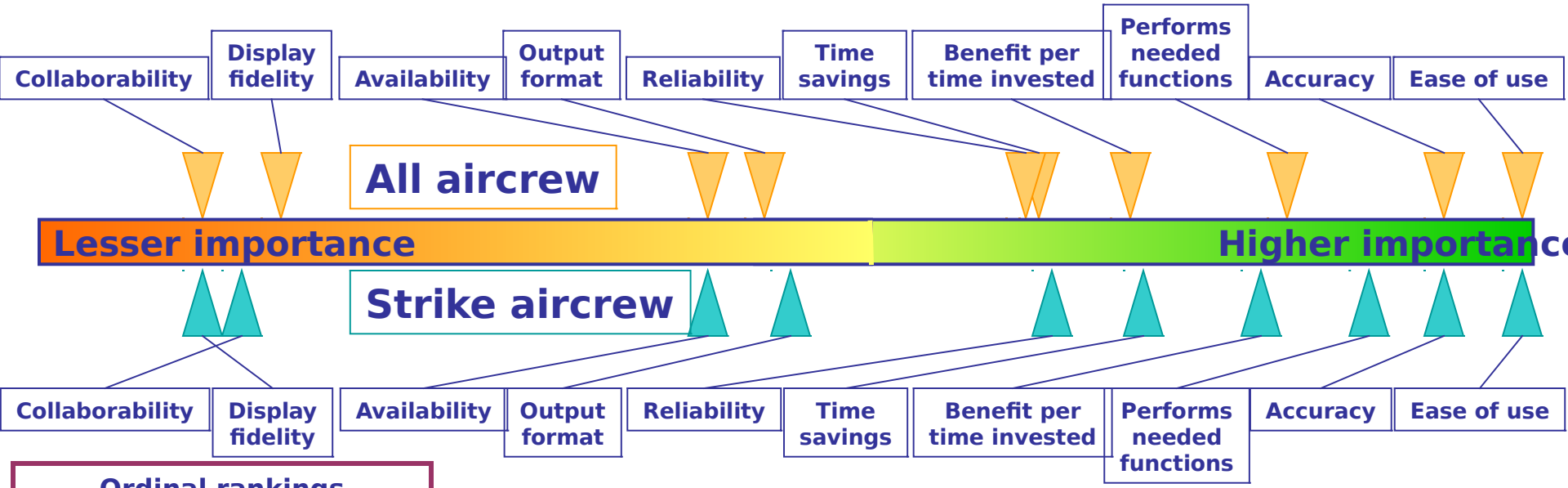
Interview Participants
By Numbers of Commands

- CARGRU - 2
- CV/CV(N) - 3
- CVW - 4
- TYPEWING - 8
- Weapon Schools - 7
- MAG - 3
- VFA - 15
- VF - 3
- VMFA - 3
- VMFA(AW) - 7
- T&E - 5
- VAW - 4
- VAQ - 4
- VS - 6
- VP - 3
- HS - 3
- HSL - 5
- HC - 2
- VMGR - 2
- TACRON-1

How Do Aircrew Rank General Mission Planning Characteristics?

Rank the following characteristics that can apply to mission planning tools in general.

- Clear desire for tools with an easy user interface that provide aircrew with time savings and benefits to amount of expended effort
- Need for accuracy being driven by precision / GPS targeting and weaponeering and rules of engagement (ROE)
- Tool functionality must provide high degree of user satisfaction

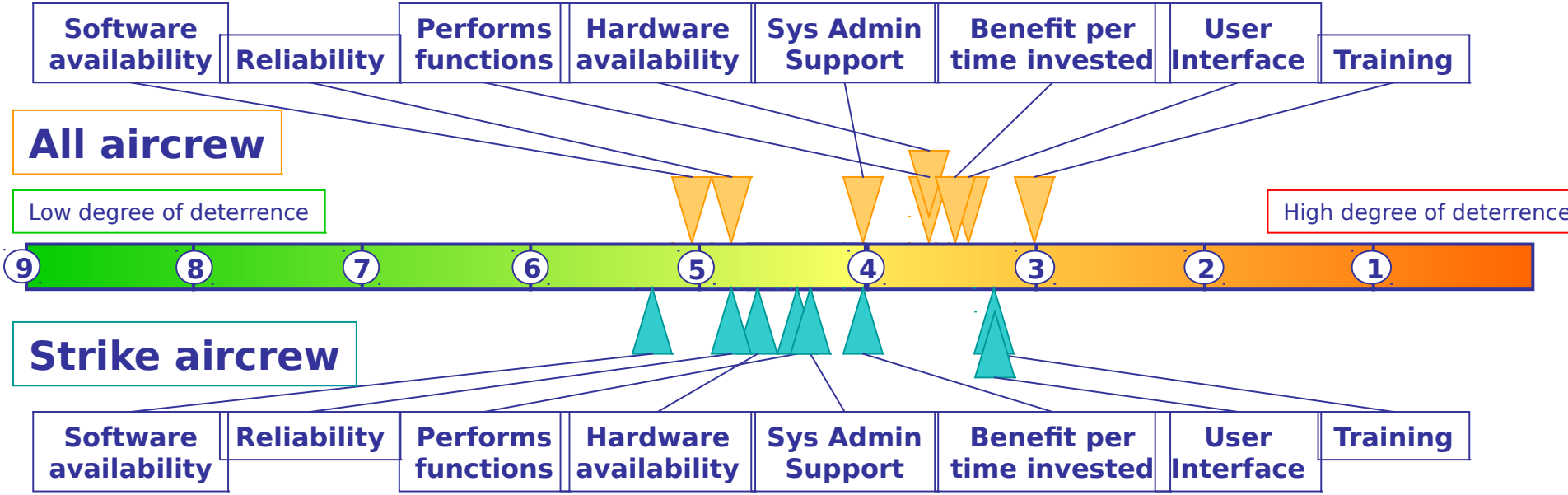


Ordinal rankings converted to interval scale values

What Factors Deter Aircrew From Using Mission Planning Tools?

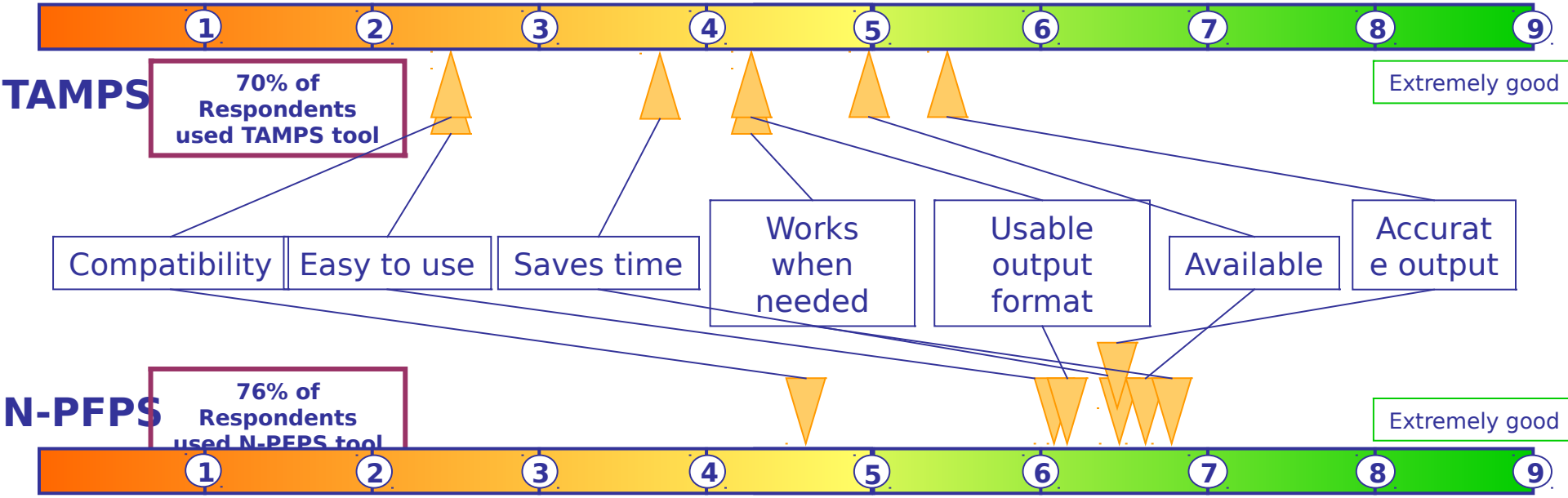
Indicate the degree that the following factors currently deter more widespread use of mission planning tools on a scale of 1- 9 (1 = high degree of deterrence).

- Reliability and availability no longer deterring aircrew mission planning
- Characteristics desired the most (User Interface and Time Benefit) currently deter aircrew the most from using mission planning tools
- Tool functionality and system admin support necessary
- Training is needed to overcome interface and functionality shortcomings; a lack of training prevents aircrew from gaining sufficient proficiency to be confident in the tool



Rate Mission Planning Tool Characteristics - TAMPS & N-PFPS

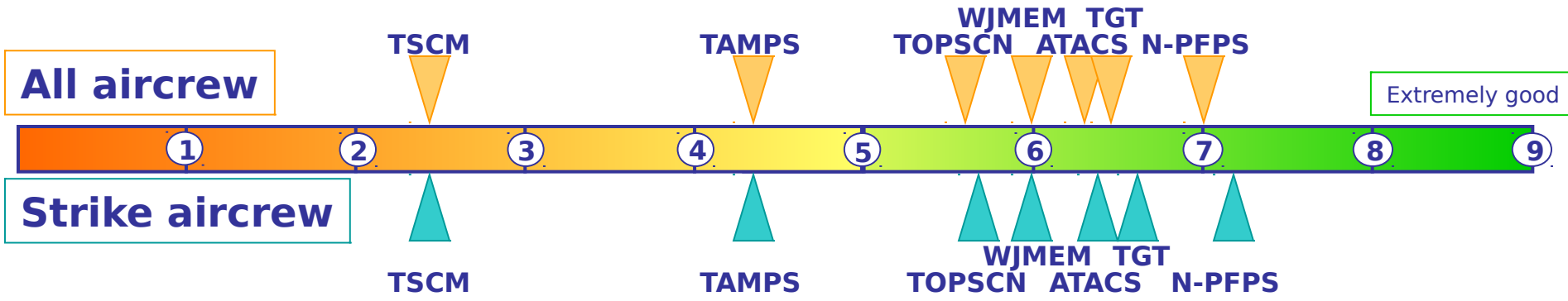
- All the characteristics desired of a mission planning tool are strongly resident in N-PFPS - "N-PFPS is far and away the tool of choice due to its utility and ease." VF aircrew
- TAMPS continues to suffer from an unfriendly user interface which still does not save planning time
- Compatibility rates low because each system still needs the other for full planning capability - "Only tasks F/A-18 fleet uses TAMPS for to this day are the weapons MPMs and the MU waypoint load functions. All additional functionality is wasted and not used because it is not intuitive and not easy to sit down and crank out a profile." VFA pilot



Developers Capture the Needs of the Fleet for Mission Planning Tools

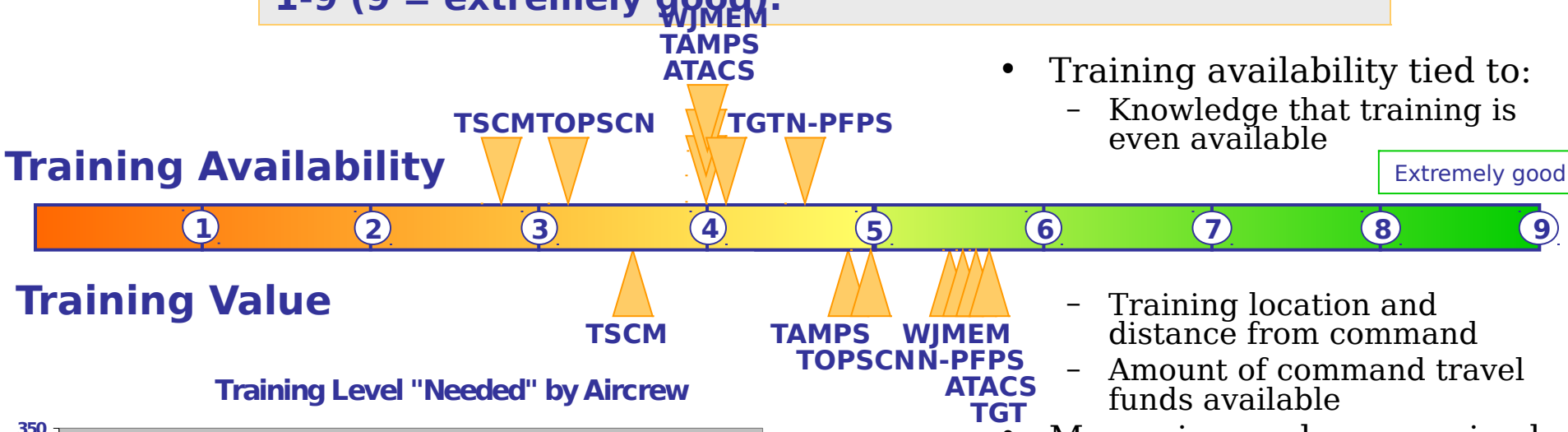
Rate how well the developers of the following planning tools captured the needs of the fleet on a scale of 1- 9 (9 = Extremely good).

- Developers captured the desires of the user by providing an easy to use interface in N-PFPS, TARGET, ATACS, and WinJMEMS
  - The less training required and the more intuitive the tool, the more apt the tool will be used for its intended purpose
- UNIX based tools that require more, or extensive, training for the planner to be functionally literate will continue to fall into disfavor with aircrew - "TAMPS was initially extremely poor. Now it is just poor… TAMPS has come a long way." VFA pilot
- TOPSCENE rating skewed by the relatively small percentage of users (<9%) and their limited exposure/experience with the tool

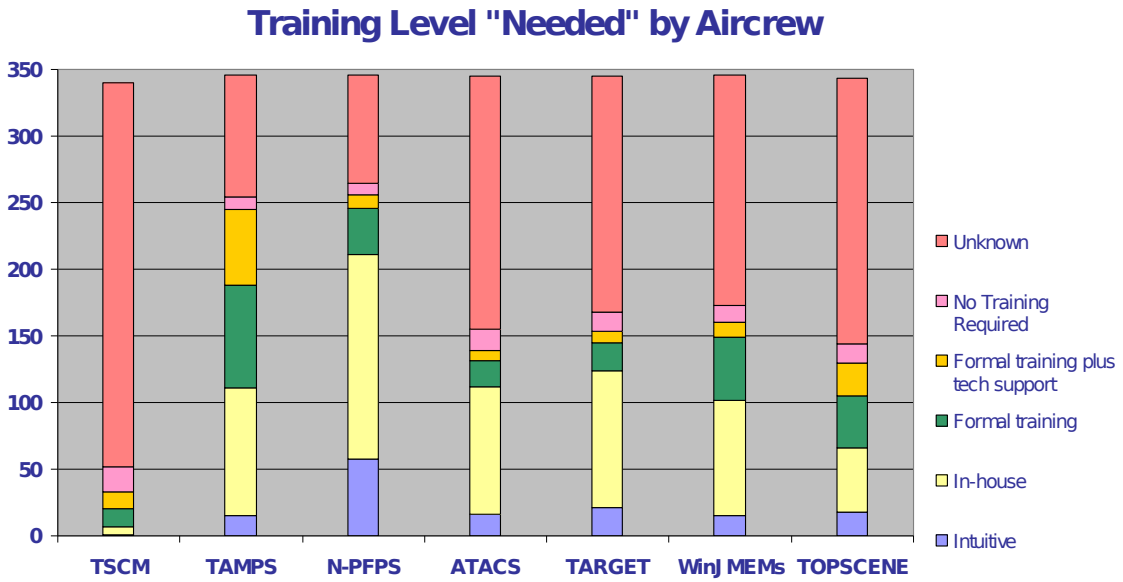


Mission Planning Tool Training: Availability, Value, and What is Needed

Rate the availability and value of external training received for the following planning tools on a scale of 1-9 (9 = extremely good).



- Training availability tied to:
  - Knowledge that training is even available
  - Training location and distance from command
  - Amount of command travel funds available



- Many aircrew have received formal training on TAMPS, but still concede it is the hardest tool to use
- Most training conducted via weapon schools and in-house
- “Training” was the primary deterrence to tool usage
- Strong opinion by operators that most training should be intuitive or in-house

Future Data Gathering

- Establish Data Base to Track Progress
- Obtain Subsequent Survey Data Either at

  Completion of Each Cruise or Prior to Inchop

  - Via ship riders
  - Distribute results to team members

Questions???